

Paper No. 12

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte PHILIP G. PERRY,
GENE W. O'DELL,
and
WILLIAM G. HERBERT

Appeal No. 1998-0764
Application No. 08/517,512

ON BRIEF

Before GARRIS, LIEBERMAN, and KRATZ, Administrative Patent Judges.

LIEBERMAN, Administrative Patent Judge.

DECISION ON APPEAL

This is an appeal under 35 U.S.C. § 134 from the decision of the examiner refusing to allow claims 2 through 5 and 11 through 14, which are all the claims pending in the application.

THE INVENTION

The invention is directed to a method of depositing a charge blocking layer or a photosensitive layer of a photoreceptor on a substrate. Prior to deposition, the substrate is cleaned with a solvent mixture comprising alcohol and an alkane by dipping the substrate into and out of the solvent. In addition, the solvent mixture is free of halogenated hydrocarbons. After cleaning, the substrate is dipped into a coating solution containing one of the above charge blocking layers.

THE CLAIM

Claim 2 is illustrative of appellants' invention and is reproduced below.

2. A method for depositing layered material onto a substrate including the steps of:
(a) cleaning the substrate by dipping the substrate into and raising the substrate from a cleaning solvent free of a halogenated solvent comprising an alcohol and an alkane; and
(b) dipping the substrate subsequent to (a) into and raising the substrate from a coating solution, thereby depositing the layer on the substrate, wherein the layer is a charge blocking layer or a photosensitive layer of a photoreceptor.

THE REFERENCES OF RECORD

As evidence of obviousness, the examiner relies upon the following references:

Nakazawa et al. (Nakazawa)

5,186,477

Feb. 16,

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1993
Yoshida et al. (Yoshida)

5,561,015

Oct. 1, 1996

THE REJECTION

Claims 2 through 5, and 11 through 14 stand rejected under 35 U.S.C. § 103(a)
as being unpatentable over Nakazawa in view of Yoshida.

OPINION

We agree with the appellants that the rejection under 35 U.S.C. § 103(a) is not well founded. Accordingly, we do not sustain this rejection.

The Rejection under 35 U.S.C. § 103

[T]he examiner bears the initial burden, on review of the prior art or on any other ground, of presenting a prima facie case of unpatentability," whether on the grounds of anticipation or obviousness. In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). On the record before us, the examiner relies upon a combination of two references to reject the claimed subject matter and establish a prima facie case of obviousness. The basic premise of the rejection is that it would have been obvious to one of ordinary skill in the art, to remove the halogenated hydrocarbons from Nakazawa leaving only the cleaning agents, such as aromatics, alcohols, ketones, ethers, and hydrocarbons. See Answer, page 3. We disagree.

We find that Nakazawa discloses a photoconductor drum to be coated with photoconductive substance. See column 3, lines 36-39. We find the photoconductor drum is first cleaned of metal powder, grease and other substances which may adhere to the surface of the drum. See column 3, lines 42-43. Thereafter the drum is immersed in a coating liquid containing a photoconductive substance which coats the surface of the drum. See column 3, lines 44-51.

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A cleaning device is disclosed in Fig. 3 for cleaning drums in the manufacture of photoconductor drums. See column 3, lines 61-65. The cleaning device comprises

a cleaning tank containing a cleaning liquid. Id. The cleaning liquid is preferably a

solvent having a KB value of 120 to 140 and includes dichloromethane, trichloroethylene, 1,1,1-trichloroethane and methylene chloride. See column 5, lines 26-33. As stated by Nakazawa, "[s]uch solvents may be used singly, or two or more of them may be used together. Also, other aromatic solvents, alcohol solvents, solvents, ether solvents, hydrocarbon solvents, etc., may be added in small quantities." See column 5, lines 42-46.

Based upon the above findings, we conclude that Nakazawa fails to disclose a cleaning liquid free of a halogenated solvent as required by the claimed subject matter. The examiner reaches the same conclusion. See Answer, page 3.

Yoshida, however, is relied upon for its teaching the omission of halogenated solvent. We find that Yoshida discloses a similar method wherein supports for electrophotographic photosensitive members are cleaned with a solution mainly composed of water. See column 2, lines 26-27. Yoshida states, "[t]herefore, supports for electrophotographic photosensitive members are cleaned using a halogenated hydrocarbon such as trichloroethylene, trichloroethane, dichloromethane and carbon tetrachloride for their degreasing property." See column 1, lines 44-47. We find moreover, Yoshida states that, "[t]he organic solvents however, including the halogenated hydrocarbon solvents, may adversely affect not only human bodies but also the global environment." See column 1, lines 52-55. Based upon the above findings, it is reasonable to conclude that Yoshida opposes the utilization of all organic solvents, and accordingly uses mainly a solution composed of water. Therefore, the person of ordinary skill in the art following the teachings of Yoshida would reasonably modify the process of Nakazawa by the substitution of aqueous solutions for the organic solvents of Nakazawa as opposed to the exclusion of halogenated organic solvents alone, as suggested by the examiner.

The examiner must show reasons that the skilled artisan confronted with the same problems as the inventor and with no knowledge of the claimed invention would select the elements from the cited prior art references for combination in the manner claimed. We determine that there is no reason, suggesting motivation to combine the references in the manner proposed by the examiner. Accordingly, the examiner has not established a prima facie case of obviousness and the examiner's rejection of claims 2 through 5, and 11 through 14 under 35 U.S.C. § 103(a) is not sustained. In re Rouffet, 149 F.3d 1350, 1355, 47 USPQ2d 1998).

Accordingly, the rejection of the examiner is reversed.

Because we reverse on this basis, we need not reach the issue of the sufficiency of the showing of unexpected results. In re Geiger, 815 F.2d 686, 688, 2 USPQ2d 1276, 1278 (Fed. Cir. 1987).

The rejection of claims 2 through 5 and 11 through 14 under 35 U.S.C. § 103(a) as being unpatentable over Nakazawa in view of Yoshida is reversed.

REVERSED

) BOARD OF PATENT
AND
INTERFERENCES

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